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09/966,753	10/01/2001	Lev Smolyar	P-1987-US1	3706

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EXAMINER

PUENTE, EVA YI ZHENG

ART UNIT	PAPER NUMBER
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2611

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03/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/966,753

Applicant(s)

SMOLYAR ET AL.

Examiner

EVA Y. PUENTE

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25, 28, and 30 is/are rejected.
- 7) ☒ Claim(s) 26,27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-28 and 30 have been considered but are moot in view of the new ground(s) of rejection.

2. Applicant's arguments filed 12/14/07 regarding Priority and Oath/Declaration have been fully considered but they are not persuasive. Examiner has thoroughly reviewed Applicant's arguments but firmly believes that applicant needs to resubmit correct Oath/Declaration and Bib Data Sheet.

Applicant further argues that Examiner should withdraw rejections made to claims 6-8 and 19-21 under 35 U.S.C. 103(a) as being unpatentable over Bottomley (US 6,363,104) in view of Applicant Admitted Prior Art (AAPA).

Examiner's response – Claims 6-8 and 19-21 are directed to possible direction combinations of finger tracking. Applicant admits that the fingers are arrived at early or delay time in rake receiver. Whether the "early-late" algorithm may or may not work is not relevant to the claimed limitations. Therefore, Examiner maintains positions over rejection.

Priority

3. Applicant's claim for foreign priority benefits under Title 35, United States Code, §119 (a)-(d) is defective. Application number 09/301,116 is filed as United States

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patent application. It is not a foreign application. Therefore, applicant cannot claim foreign priority benefits.

Oath/Declaration

4. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by applicant number and filing date is required. See MPEP § 602.01 and 602.02.

The oath or declaration is defective because:

Applicant can not claim foreign priority benefits under U.S patent application number 09/301,116. Therefore, the oath/declaration is defective. Applicant needs to file a new Oath/Declaration and new Bib Data Sheet.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 9-18, 22-25, 28 and 30 are rejected under 35 U.S.C. 102(e) as being unpatentable by Bottomley (US 6,363,104).

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a) Regarding claim 1, Bottomley disclose a rake receiver comprising:

a direction metric determiner which generates direction metrics of each of a set of possible directions of joint movement of at least two fingers of a finger block of the rake receiver (408 in Fig. 4; received samples are delayed in each fingers 604a-e as shown in Fig. 6; wherein the delays are selective), wherein said at least two fingers of said finger block jointly track at least two paths of a multipath channel, and wherein said at least two paths have a time separation that is less than approximately 1.5 times a chip duration (Fig 2 depicts a conventional rake receiver, wherein the fingers have delay time of 1 chip period; Col 2, L45-55);

a metric selector which selects one of said direction metrics according to a predetermined criterion (410,412, and 414 in Fig. 4; Col 6, L41-49); and

a finger adjuster which moves the fingers of said finger block in the directions indicated by said selected direction metric (416 in Fig. 4; 612 in Fig. 6; Col 7, L42-58).

b) Regarding claims 2 and 15, Bottomley disclose wherein said selected direction metric is the maximal direction metric (the selected metric is the best metric; 414 in Fig. 4).

c) Regarding claims 3 and 16, Bottomley disclose wherein said finger adjuster moves the fingers of said finger block only if said selected direction metric is the maximal direction metric and exceeds a comparison direction metric by at least a predetermined threshold (fingers are moved to the best metric and the best metric is better (i.e exceeding) than any other metrics).

d) Regarding claims 4 and 17, Bottomley disclose wherein said finger adjuster

includes a redefiner which redefined finger blocks once said fingers have been moved (remove chip 608 in Fig. 6).

e) Regarding claims 5 and 18, Bottomley disclose wherein said finger block is formed of two fingers (delay 604a-b as shown in Fig. 6).

f) Regarding claims 9 and 22, Bottomley disclose wherein said finger block is formed of two closely spaced fingers (delay 604a-b with sampling rate of two samples per chip as shown in Fig. 6).

g) Regarding claims 10, 12, 23 and 25, Bottomley disclose the delays between fingers are set to $7/8$ chip apart and no smaller than $7/8$ chip (chip rate of $1/2$ and extend to any rate; Col 7, L25-30).

h) Regarding claims 11 and 24, Bottomley disclose wherein said finger block is formed by three fingers (delay 604a-c as shown in Fig. 6 as shown in Fig. 1).

i) Regarding claims 13 and 28, Bottomley disclose wherein said direction metrics are based on power estimation (channel coefficients calculation 502 in Fig. 5; Col 6, L49-66).

j) Regarding claim 14, Bottomley disclose an article comprising a computer readable storage medium having encoded thereon instructions, that, when executed by a computing platform, cause the computing platform to

generate direction metrics of each of a set of possible directions of joint movement of at least two fingers of a finger block of a rake receiver (408 in Fig. 4; received samples are delayed in each fingers 604a-e as shown in Fig. 6; wherein the delays are selective), wherein said at least two fingers of said finger block jointly track at least two

paths of a multipath channel, and wherein said at least two paths have a time separation that is less than approximately 1.5 times a chip duration (Fig 2 depicts a conventional rake receiver, wherein the fingers have delay time of 1 chip period; Col 2, L45-55),

select one of said direction metrics according to a predetermined criterion (410,412, and 414 in Fig. 4; Col 6, L41- 49), and to

move the fingers of said finger block in the directions indicated by said selected direction metric (416 in Fig. 4; 612 in Fig. 6; Col 7, L42-58).

k) Regarding claim 30, Bottomley disclose a method comprising:

forming a finger block of at least two fingers of a rake receiver (received samples are delayed in each fingers 604a-e as shown in Fig. 6), wherein said at least two fingers of said finger block jointly track at least two paths of a multipath channel, and wherein said at least two paths have a time separation that is less than approximately 1.5 times a chip duration (Fig 2 depicts a conventional rake receiver, wherein the fingers have delay time of 1 chip period; Col 2, L45-55); and

jointly tracking the fingers of said finger block by (606 in Fig. 6):
generating direction metrics of each of a set of possible directions of joint movement of the fingers of said finger block (408 in Fig. 4; the delays are selective);

selecting one of said direction metrics according to a predetermined criterion (410,412, and 414 in Fig. 4; Col 6, L41-49); and

moving the fingers of said finger block in the directions indicated by said selected direction metric (416 in Fig. 4; 612 in Fig. 6; Col 7, L42-58).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6-8 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottomley (US 6,363,104) in view of Applicant Admitted Prior Art (AAPA).

a) Regarding claims 6-8 and 19-21, Bottomley disclose a CDMA system with metric for selective delays, but is silent about different directions of joint movement of fingers. However, AAPA disclose that to achieve synchronization in rake receiver it often require early-late mechanism ([0007]). Typically, early-late (early, late, on-time) tracking mechanism adjusts the assigned delay or offset based on the difference in finger energy between an early hypothesis (less delay) and a late hypothesis (more delay). For two fingers tracking example, there are 9 possibilities: both on-time; both late; both early; first on-time, second late; first late, second on-time; first early, second late; second on-time, first late; second-late, first on-time; and second early, first late. Therefore, it is obvious to one of ordinary skill in art to combine to the teaching of early-late mechanism by AAPA with the CDMA receiver of Bottomley. By doing so, provide signal synchronization and reduce power consumption in a rake receiver.

Allowable Subject Matter

9. Claims 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Y Puente whose telephone number is 571-272-3049. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eva Yi Puente
Examiner
Art Unit 2611

February 21, 2008


CHIEH M. FAN
SUPERVISORY PATENT EXAMINER